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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,077	06/09/2005	Young-Hoan Jun	0630-2336PUS1	7190
2292 7590 08/04/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER HAMO, PATRICK				
ART UNIT		PAPER NUMBER		
3746				
NOTIFICATION DATE		DELIVERY MODE		
08/04/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/538,077

Applicant(s)

JUN ET AL.

Examiner

PATRICK HAMO

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8, 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Continued Prosecution Application

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 2, 2009 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo et al., US 6,565,327 in view of Fry et al., US 4,875,000.

In regard to claims 5 and 12:

Yoo discloses an operation control apparatus for a reciprocating compressor comprising voltage and current detection units, a stroke calculation unit based on

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detected V and I, varying the stroke based on a signal generated by a control unit. Yoo does not disclose an overcurrent cutoff system and any of its peripheral and structural elements.

However, Fry teaches an overcurrent cutoff system for an AC controller including a standard current value storing unit V_{ref} , a comparing unit 62, a control unit 64 for generating a cut-off signal, and a power supply device 22 cut off by the unit 64 in an overcurrent situation, when the voltage output from the current sensor is greater than V_{ref} . It is well known in the art that refrigerator compressors, such as that disclosed by Yoo, are especially sensitive to overcurrent situations. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have modified the refrigerator compressor of Yoo with the overcurrent cutoff system of Fry to protect the compressor from such situations by cutting off the source current to the compressor motor when the current is too high.

In regard to claim 6:

Yoo discloses a triac Tr1 as a current control means.

In regard to claim 7:

Yoo's compressor is installed on a refrigerator.

In regard to claims 13 and 14:

Fry's overcurrent cutoff system further outputs the resulting signal, whether the current is greater or less than the reference value, to a current control device in the form of switch 50 in the power supply device 22.

In regard to claim 15:

Yoo's microcomputer controls the ramp-up startup for the compressor while the compressor is running, which corresponds to the current being less than or the same as the reference current.

Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 5 above in view of Oh et al., US 6,289,680.

The references as applied to claim 5 teach all of the limitations substantially as claimed except for comparing a detected stroke to a preset stroke reference value. However, Oh teaches a refrigerant compressor where a stroke controller 33 compares the stroke value based on the voltage and current applied to the compressor and compares it to a reference stroke to maintain a stable stroke (col. 9, line 61 – col. 10, line 15). Therefore it would have been obvious to a person having ordinary skill in the art at the time of the invention to have modified the references as applied to claim 5 with Oh to provide a stable compressor stroke. In combination, it would further be obvious to a person having ordinary skill that this would operate when the detected current value is same as or smaller than the standard current value, otherwise the compressor would be shut off.

Response to Arguments

Applicant's arguments with respect to claims 5-8 and 11-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICK HAMO whose telephone number is (571)272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

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/Patrick Hamo/
Patent Examiner, AU 3746